Naval Information Warfare Center Atlantic

NavalX Palmetto Tech Bridge

Palmetto Tech Bridge Kick Off
College of Charleston

07 January 2020

Mr. Michael Merriken
Director, Palmetto Tech Bridge
NIWC Atlantic

NIWC Atlantic is part of the Naval Research & Development Establishment (NR&DE)

NavalX

The 2018 National Defense Strategy was a call to the Department of Defense to find ways to harness innovation in private businesses and academia to better serve and protect our country.

James Geurts, Assistant Secretary of the Navy for Research, Development & Acquisition (ASN (RD&A)) established NavalX in January 2019 to expand the Department of the Navy's (DON) capabilities.
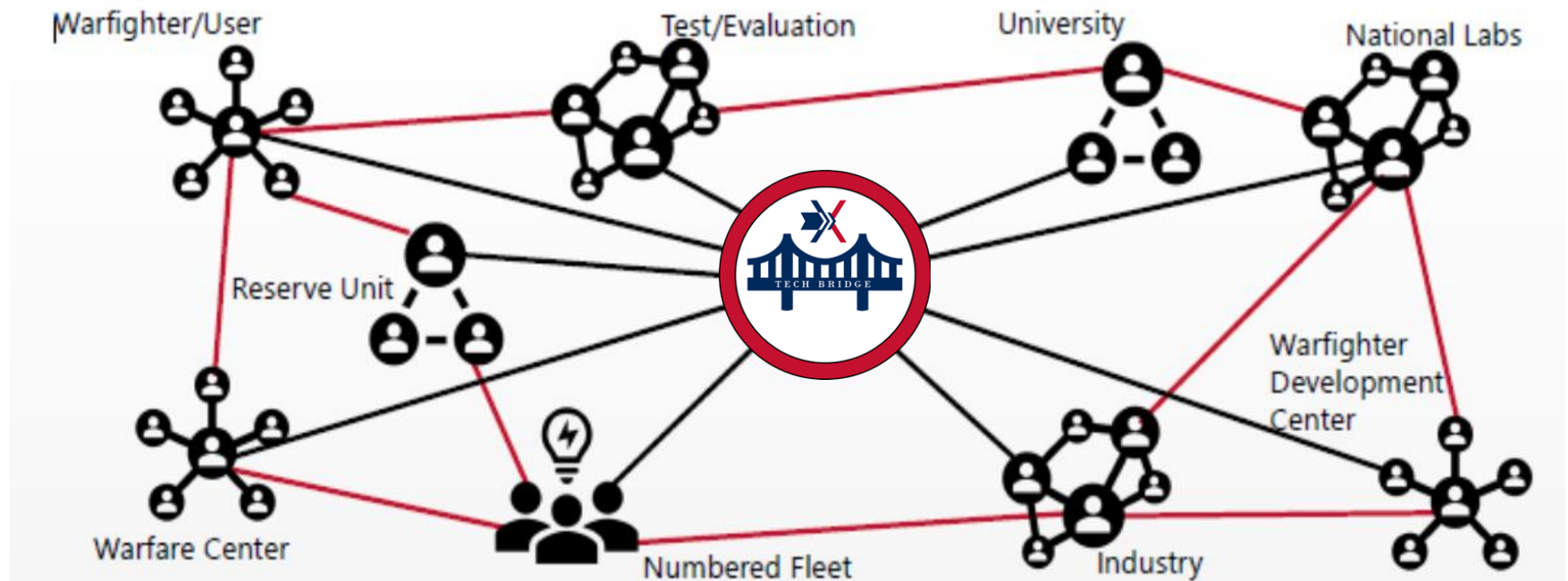
NavalX connects both the internal DON and external DON partners to increase awareness and access to best practices and technologies.

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

2

NavalX

NavalX Mission Lines of Effort

Playbooks

Find and document what works
Connect users to mentors
Make adoption easy!

Tech Bridges

Connecting the workforce to other agencies, small businesses, startups, non-profits, academia, and private capital markets.

Launch Platforms

Seaside Chats, Workshops, Human/Warfighter Centered Design, Training Events

Awards & Learning Stories

Recognize community through continuous awards & stories to incentivize agility behaviors

NavalX = Connector
Increasing the density of Naval networks inside the DON and with industry and building collaborative relationships

NAVAL_X

Learn | Share | Guide | Connect | Accelerate

NavalX

▼ NavalX is …

- *Not* scouting coolest technology
- *Not* replacing other Naval innovation or war room efforts
- *Not* a buying activity like DIU
- *Not* a funding activity
- *Not* a means to circumvent the POM process
- *Not* competing with other defense innovation hubs (NSIN, AFWERX, etc.)
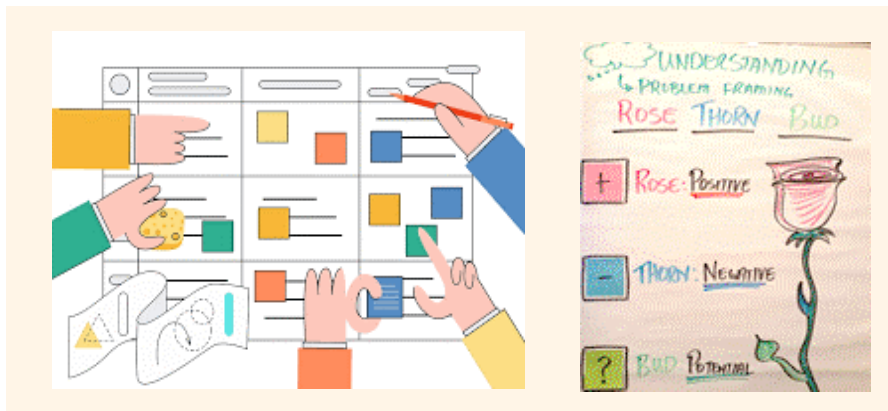- *Not* the same as SOFWERX but can partner with SOFWERX

▼ NavalX is ...

- ➢ **Building networks, breaking down silos, and connecting people!**
- ➢ **Accelerating the pace of discovery, learning, experimentation**
- ➢ **Making change easier**

NavalX

Connect with the Private Sector

Goal → Increase Network of Partners and Collaboration on Projects/Problems

Deliver Agility Methods to the Workforce

Goal → A workforce that embraces discovery, learning and innovation

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

5

NavalX – Tech Bridge

Great space in town – a "business commons" or "innovation collective"

Collaboration with naval technologists and facilities

Connect to programs for requirements, funding paths and user feedback
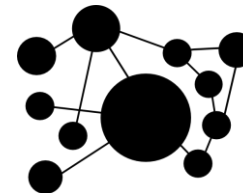
Improved partnerships with academia, small business, startups, venture capital, non-profits and local organizations

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

6

NavalX – Tech Bridge

First Six Locations To Connect DON and the Private Sector

Tech Bridges will operate on a "franchise" model allowing each region to develop their own model to connect to their unique innovation ecosystem

Keyport, WA

Crane, IN

San Diego, CA

Newport, RI

Charleston, SC

Orlando, FL

Palmetto Tech Bridge

▼ Objective

- To build, enhance and sustain a regional naval innovation ecosystems centered around the NIWC Atlantic lab that supports greater collaboration with a variety of partners and stakeholders on projects of relevance to the DON and work toward transitioning dual-use solutions to meet both national defense needs and enhance the region's economic strength with innovative commercial products.

▼ Success

- Develop collaboration and trust as an innovation ecosystem allowing us to more quickly and agilely, take risks, think creatively, to produce timely solutions, and become known as a center of excellence for the Navy and the SE region

Palmetto Tech Bridge

PTB Collaboration/Innovation Ecosystem

Naval Information Warfare Center — ATLANTIC

- **ONRG**
  - SA

- **Navy (Warfighter)**
  - PEO
  - PMW
  - USMC
  - SBIR

- **$$$ Rqmts**

- **NavalX**

- **Naval Information Warfare Center — ATLANTIC**
  - **Leadership/Director**
  - **Labs/facilities**
  - **Tech Challenges**

- **MOU**

- **Gov't Labs**
  - DOE
  - DoD
  - **$$$**

- **Universities**
  - **Labs**
  - **Facilities**
  - **Future workforce**
  - **Tech Challenges**

- **Outside ($$$) Funding**
  - VC
  - Angels
  - Endowments

- **Startups**
  - Digital Corridor

- **Industry**
  - **Tech Problems**
  - **IR&D ($$$)**
  - **Labs**
  - **Facilities**
  - **Tech Challenges**

- **South Carolina**
  - **Chamber of Commerce**
  - **MEP**
  - **State $$$**
  - **SCRA**

Dual-use Novel Technology Solutions to Naval Problems

9

Palmetto Tech Bridge

PTB Collaboration/Innovation Ecosystem

Success Criteria

Naval Warfighter →

Naval Information Warfare Center

ATLANTIC
- Leadership/Director
- Labs/facilities
- Tech Challenges

MOU

Gov't Labs
- DOE
- DoD
- $$$

Reputation →

Universities
- Labs
- Facilities
- Future workforce
- Tech Challenges

Profit/ROI →

Industry
- Tech Problems
- IR&D ($$$)
- Labs
- Facilities
- Tech Challenges

Economic Development →

South Carolina
- Chamber of Commerce
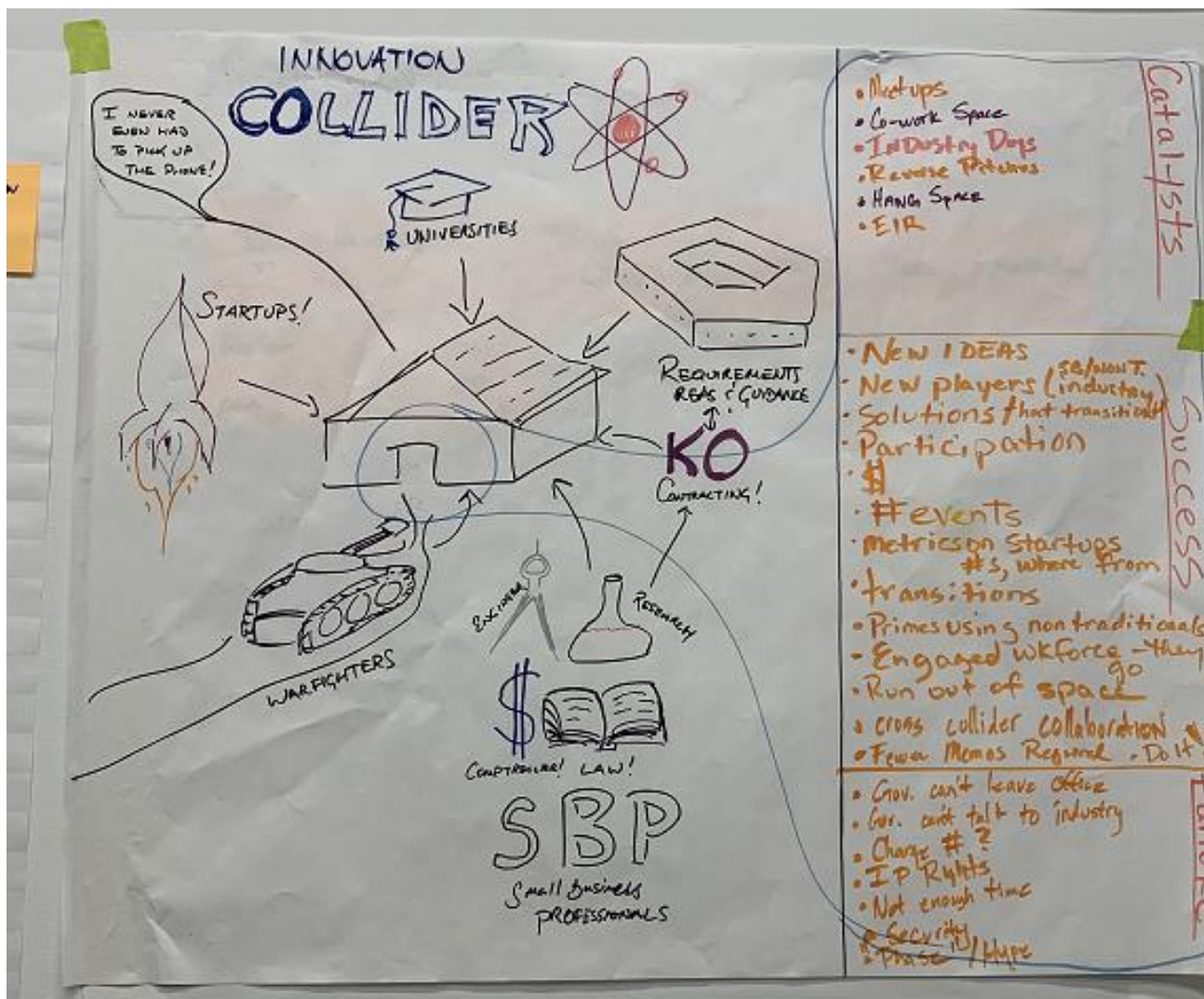- MEP
- State $$$
- SCRA

Dual-use Novel Technology Solutions to Naval Problems
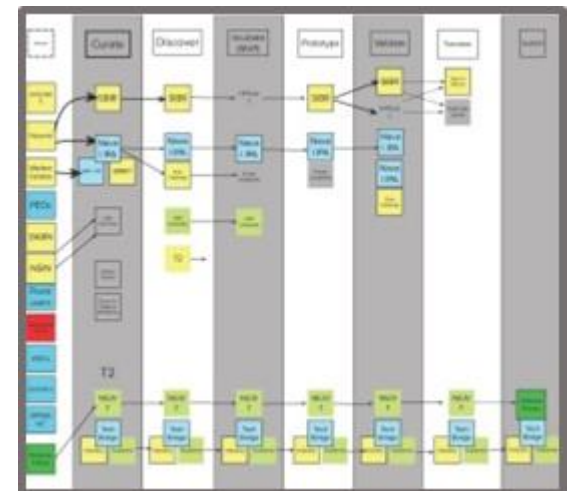
10

Palmetto Tech Bridge

▼ Multi-year plan

- Refine and initiate first Technical Challenge
- Clarify PTB Innovation Ecosystem and "rules of the road"
  - Break down processes….but not break laws
  - Mindset: …. Take calculated risks …. be ready to adapt …. Why Not??
- Identify off-site location(s)
- Need to further refine the focus areas that address both Navy and partners problems/interests
  - Cybersecurity
  - Autonomous Systems
  - Additive Manufacturing
  - Communications (5G)
- Generate a PTB Roadmap for follow-on years
  - Use BMNT Problem Curation process

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

11

Palmetto Tech Bridge

Tech Bridge Pipeline
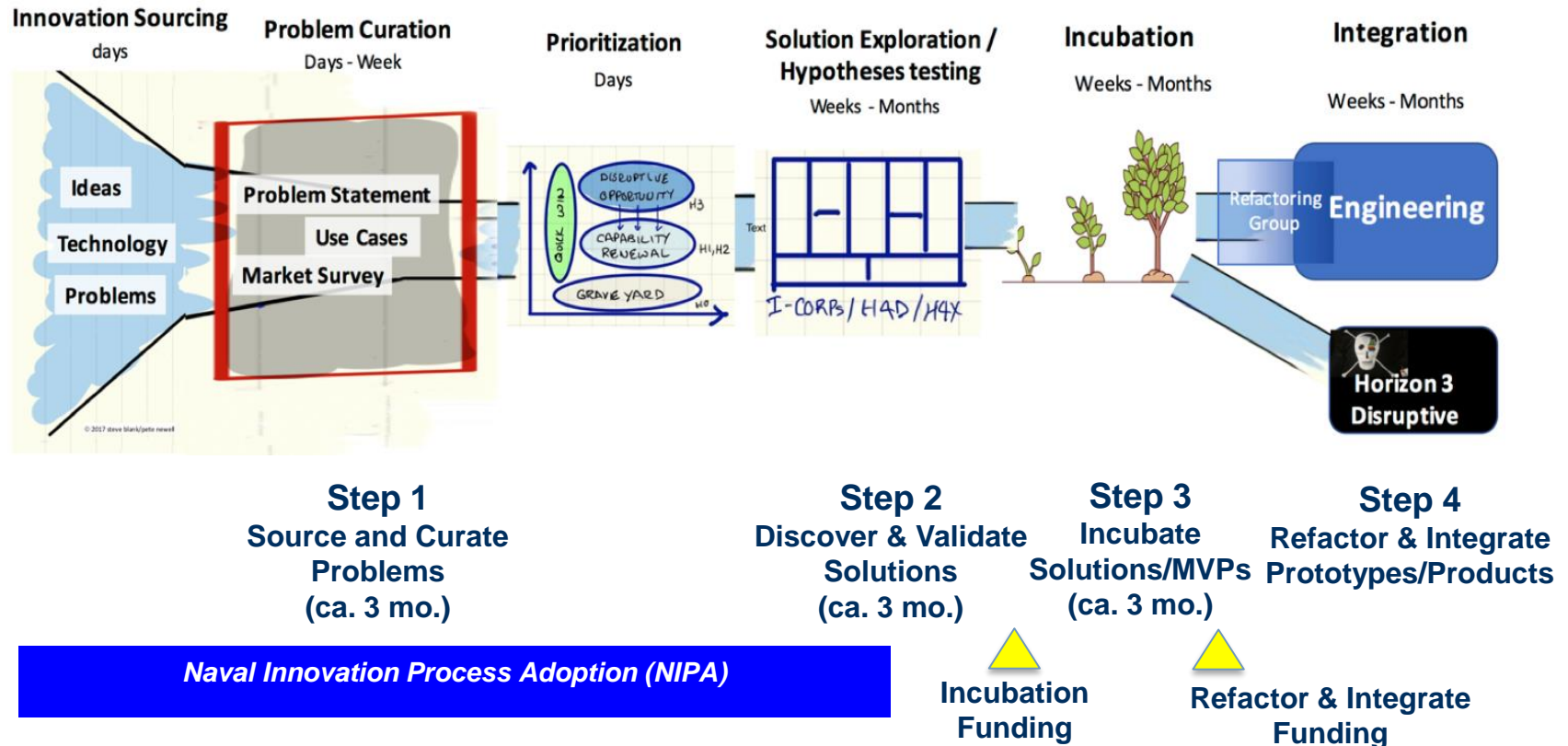
▼ We are currently developing a pipeline that will go from problem sourcing to solutions sustainment

▼ This pipeline is connecting existing efforts from ONR and various Warfare Centers

- Naval Innovation Process Adoption (NIPA)
- Rapid Innovation Prototyping Lab (RIPL)
- Naval Innovation, Science, Engineering (NISE)

▼ Connected from the start with end users and requirements offices

NIPA Pipeline

Lean/H4D Innovation Pipeline

Step 1
Source and Curate Problems
(ca. 3 mo.)

Step 2
Discover & Validate Solutions
(ca. 3 mo.)

Step 3
Incubate Solutions/MVPs
(ca. 3 mo.)

Step 4
Refactor & Integrate Prototypes/Products

Naval Innovation Process Adoption (NIPA)

Incubation Funding

Refactor & Integrate Funding

Reference: https://steveblank.com/2017/10/10/office-of-naval-research-onr-goes-lean/

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

14

Palmetto Tech Bridge

▼ Funding Mechanisms

- PEO/PMW/USMC customers/warfighter who want specific technical problems addressed

- Other Federal Agency partners

- ONR – Naval Innovation Process Adoption (NIPA)

- Internal funds/in-kind from each partner
  - NISE collaborative research (CRADA)
  - Corporate IR&D
  - University

- External investors
  - VC
  - Angel investors
  - SC State

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

15

Palmetto Tech Bridge

▼ Collaboration Mechanisms

- Challenge and Grants

- Small Business Innovation and Research (SBIR/STTR)

- Other Transaction Authority (OTA) – IWRP

- Partnership Intermediary Agreements (PIA)

- Cooperative Research and Development Agreements (CRADA)

- Commercial Service Agreement (CSA)

- Education Partnership Agreement (EPA)

- Federal Acquisition Regulations (FAR)

- Rapid Acquisition Authorities

- Industry personnel Exchange/Rotation programs

Palmetto Tech Bridge

▼ Intellectual Asset management

- Work in an unclassified, open-source environment
- Intellectual Assets
  - Intellectual capital
  - Relationship capital
  - Human capital
- Form a PTB legal community of practice
  - Start with T2 best practices
  - Build external relationships
    - Honor a priori trade secrets/patents
    - Equitable use/distribution of data/IP rights
      - Field of use
      - Industry segments

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

17

Palmetto Tech Bridge

▼ Off-Base sites

- Charleston Site
    - Off JBC - Multi-use collaboration/collision facility
    - Supports initial focus areas that address both Navy and partners problems/interests
        - Cybersecurity
        - Autonomous Systems
        - Communications (5G)
        - Additive Manufacturing
- Secondary Sites
    - TBD
        - Columbia
        - Beaufort

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

18

Palmetto Tech Bridge Site Location Ideas

Palmetto Tech Bridge

▼ We are not alone……

- ASN(RDA)
- ONR support
  - Naval Accelerator Office
  - SBIR Office
  - Technology Transfer Office
- NavalX / Tech Bridge Collaborations
  - Daily communications (phone, Slack, email)
  - Weekly telecons
  - Quarterly meetings
- Best practices from SOFWERX, AFWERX, DDS
- Other Federal Agencies

Palmetto Tech Bridge

▼ Initial Steps

- Kick-off Meeting – Jan 7, 2020
- Expand Web site and social media outlets for communications
- Identify collaboration facilities/locations

▼ Next Steps

- Discovery and Validate step ~ late Feb
  - Problem statements with specific responsibilities
- Incubate Solutions step ~ late April
  - Contract/agreement vehicle(s) and initial funding
- Downselect and Prototype awards ~ Oct
- Validate Prototypes ~ Spring 2021

▼ Advisory Board

Palmetto Tech Bridge

▼ Homework

- Interested in your feedback.
    - Site location
    - Future collaboration
    - What will you bring to the PTB?

Palmetto Tech Bridge

▼ Define partners and contributions

		Location	Autonomous Systems	Electronics Prototyping	AI/ML	Software Development	Comminications lab	Data Analytics/ Big Data	Training	Incubator Services	Industry/Gov/Academia Networking	Federal Tech Commercialization	Funding Source
Regional Federal Partners	NIWC Atlantic	Charleston	X	X	X	X	X	X	X		X	X	X
Academic Partners		Columbia	X		X	X		X	X	X	X	X	X
		Beaufort	X			X			X				
		Charleston	X			X			X	X	X	X	
SC State Oganizations										X	X	X	X
			X		X						X	X	X
Industry Partners		Charleston								X	X	X	X

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

23

Palmetto Tech Bridge

▼ Future Vision

- Tech Bridges will be a self-sustaining Regions of excellence
- Tackling multiple, simultaneous technical challenges

▼ Information Outlet

- o **https://www.public.navy.mil/navwar/Atlantic/Pages/PalmettoTechBridge.aspx**
- o **https://www.secnav.navy.mil/agility**

▼ Contact

- Michael Merriken
  - Michael.merriken@navy.mil

Serve our Nation by delivering information warfare solutions that protect national security.
WIN THE INFORMATION WAR.

NIWC Atlantic is part of the Naval Research & Development Establishment (NR&DE)

Web: https://www.public.navy.mil/navwar/Atlantic Facebook: https://www.facebook.com/NavalInformationWarfareSystemsCommand
Twitter: https://twitter.com/navwarHQ Instagram: https://www.instagram.com/spawarhq/ Linkedin: https://www.linkedin.com/company/spawar/
Glassdoor: https://www.glassdoor.com/Overview/Working-at-SPAWAR-Systems-Center-Atlantic-EI_IE638508.11,41.htm
Employment opportunities: https://www.usajobs.gov/ NIWC Atlantic Small Business: https://www.public.navy.mil/navwar/Atlantic/Pages/ForIndustry.aspx
NAVWAR Contract Directorate Office: https://e-commerce.sscno.nmci.navy.mil

Naval Information Warfare Center

ATLANTIC

Additional information
Backup

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

26

NavalX – Tech Bridge

▼ 401 Tech Bridge
- NAVSEA CTO/ NUWC Newport, RI
  - Director, Steven Bordonaro

▼ Northwest Tech Bridge
- NUWC Keyport, WA
  - Director, LCDR Johannes Schonberg

▼ SoCal Tech Bridge
- NIWC Pacific, CA
  - Director, Josh Caplan

▼ Central Florida Tech Bridge
- NAWC TSD, FL
  - Director, Diana Teel

▼ Midwest Tech Bridge
- NSWC Crane, IN
  - Director, Monica Hutchens

▼ Palmetto Tech Bridge
- NIWC Atlantic, SC
  - Director, Michael Merriken

Palmetto Tech Bridge

Innovation Pipeline

Source
- Navy
- Consortium

Discover
- Tech Scout
- Interviews

Prototype
- Test
- Down Select

Transition/ Transfer
- Integration

Curate
- Tech possible
- Problem statement

Incubate
- MVP
- Multiple projects

Validate
- Evaluation

Sustain
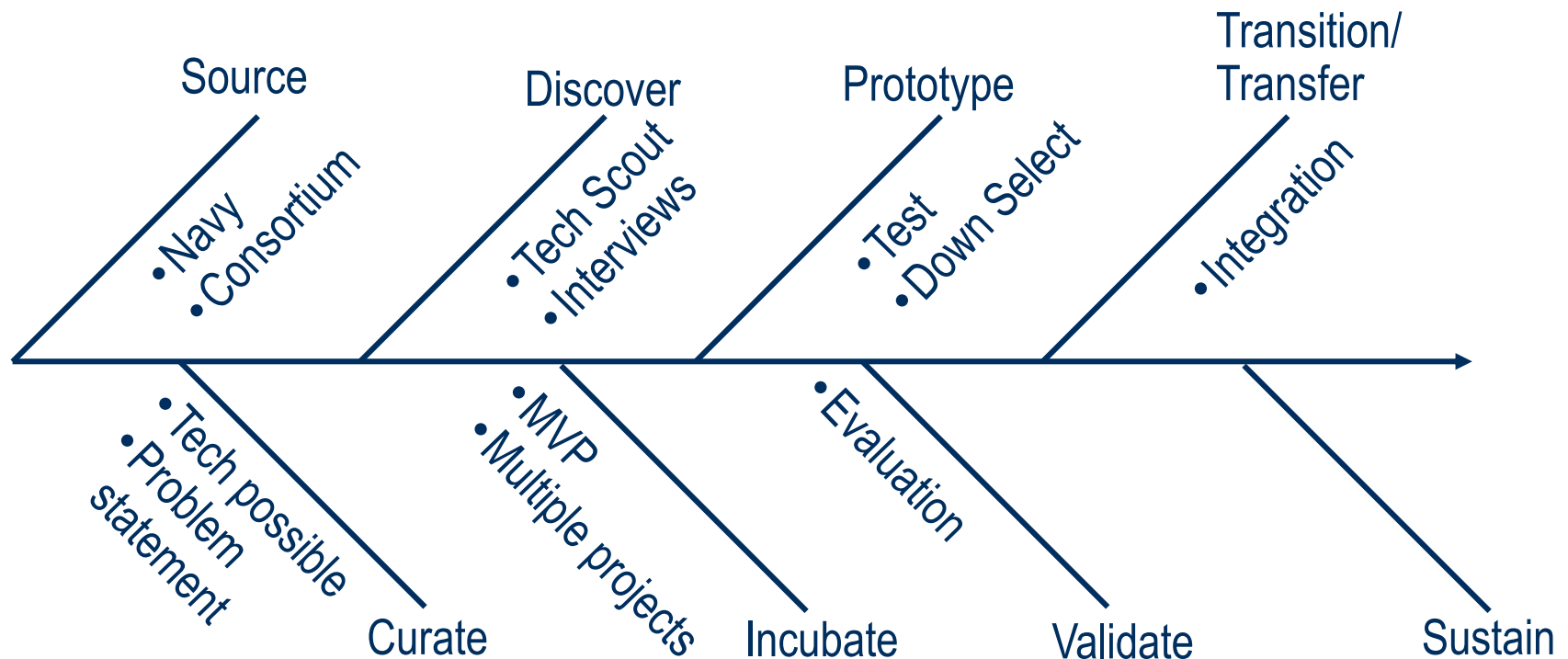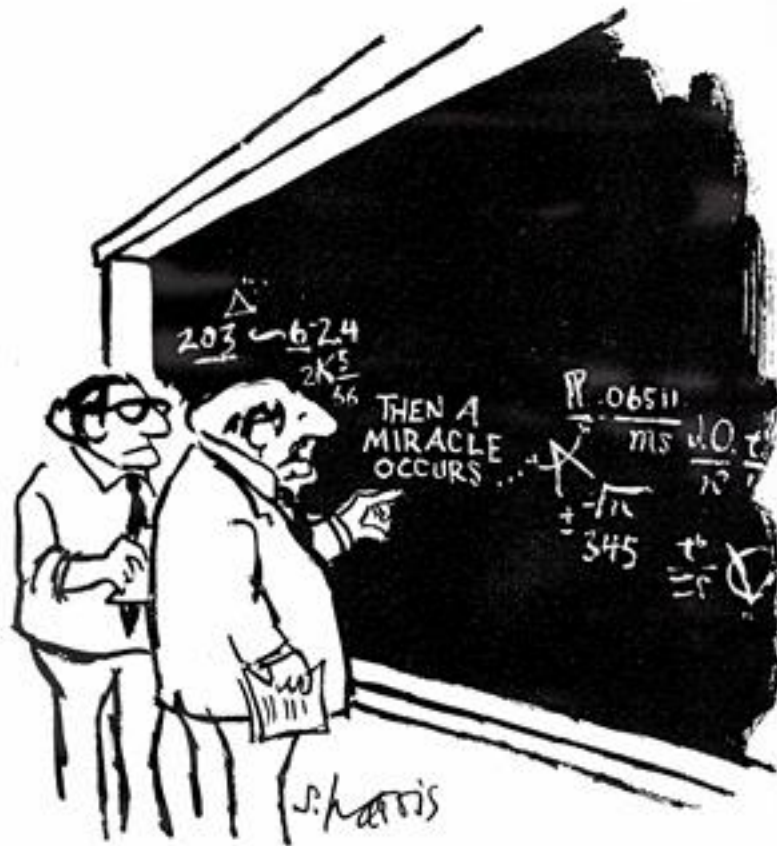
"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."

Palmetto Tech Bridge

Innovation Pipeline 2.0

Source Problem
- PEO/PMW
- MARFORCOM
- Warfighter/SA
- ONR
- FNC
- NIWC Dept

Curate Problem
Refine the problem – not solutions
- feasible
- Tech. possible

Team
- Navy customer
- NIWC Dept/IPT
- Warfighter/SA
- Industry
- Academia
- State Partners

Tech discovery
- Tech Scouting
- Interviews
Iterate curation

Problem decomposition into execution elements
- Small, med, large elements
- Integration
- Phases ???
- Manage a priori IP/trade secrets

Identify potential transition paths and commercialization opportunities

Identify Funding Sources
- Navy customers
- USMC customers
- NISE
- Industry (IR&D)
- State
- Private

Identify execution Vehicles
- Prize challenges
- SBIR
- IWRP
- CRADA (NISE)
- PIA
- 2373 procurement

Generate agile schedule
- Sprints
- Milestones
- Customer engagement
- Use multiple outside locations

Announce opportunities
- Challenge.gov
- FedBizOps
- BAA
- OTA
- SBIR
- NISE

A

Palmetto Tech Bridge

Innovation Pipeline 2.0 (con't)

```
( A )  →  Evaluate and award
           •Establish TEB
           •Select awardees across each execution element
```
→
```
Incubate Minimum viable products
•TRL<5
•Bench testing
•Multiple examples
•downselect
```
→
```
Prototype
•TRL 5-6
•Engineering feasibility fully tested
•Customer/input engagement
       •Naval
       •Commercial
```
→
```
Validate
•TRL 7-8
•Evaluation
       •ANTX
       •Naval Exercises
•Commercial testing
```

```
Transition/Transfer
•TRL 9
•Transition to warfighter
•Transfer to Industry
   • Non-exclusive licenses
   • Field of use
   • Industry segment
```
→
```
Sustain
•Owner identified
```

Statement A: Approved for Public Release. Distribution is unlimited (06 January 2020).

31